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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/758,827	01/15/2004	Scott Fuller	AM-5852.D1	7133

7590

03/14/2005

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EXAMINER

BARRECA, NICOLE M

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 03/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/758,827

Applicant(s)

FULLER ET AL.

Examiner

Nicole M Barreca

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-18, 20, 21, 23, 24, 28, 29, 31 and 32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-18, 20, 21, 23, 24, 28, 29, 31 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

1. Claims 16-18, 20, 21, 23, 24, 28, 29, 31 and 32 are pending in this application.

Response to Amendment

2. The amendment filed 12/14/04 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the amendments made to [0038] and [0113] changing 365 days to 370 days is not supported by the applicant's original disclosure.

The applicant argues that Figure 4 shows data out to 370. While Figure 4 does illustrate a single point beyond 365 days, this point is not labeled, nor is there is any information anywhere else in the applicant's specification or figures which describes this point and would lead one to believe that it is 370. Since the graph in Figure 4 does not have evenly spaced dated points extrapolating a value for this point is impossible and therefore the examiner is unclear as to how the applicant arrived at the value of 370 days for this particular point.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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4. Claims 16-18, 20, 21, 23, 24, 28, 29, 31 and 32 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The examiner has not found support for the following:

-PAB at an end point of 85 °C (cl.16, 20). The applicant argues that the specification (p.33-35) teaches a PAB temperature between 84 °C and 118 °C. The examiner agrees that the applicant is supported for an end point of 84 °C and suggests amending to such.

-Storage of the substrate for more than 2 hours (cl.16,20) and storage of the substrate between 2 hours and 370 days (cl.24). The applicant argues that support for 2 hours is found in Figure 3. However the applicant labels Figure 3 as prior art, not the applicant's data. The applicant also argues that the substrate is stable from 1 day as illustrated in Figure 4. The examiner agrees that the applicant is supported for a lower end point of 1 day and suggests amending to such. Figure 4 does not support 370 days for the reasons discussed previously.

-PAB at an end point of 1 minute (cl.18, 21,29). In response to the applicant's argument, please note again that Figure 3 is prior art, not the applicant's data.

-The specification does not support that the substrates are exposed to "ambient atmosphere conditions" as amended in claims 16 and 20.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 16-18, 20, 21, 23, 24, 28, 29, 31 and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Montgomery (6605394).

The applied reference has a common inventors and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

7. Chemically amplified DUV photoresist DX 1100 (modified phenolic polymer with onium salt metal halide complex amplifier) is applied on a mask substrate. A post-application bake is critical for obtaining acceptable CD uniformity performance. The PAB was performed for 7 minutes at 105 °C. There is a less than 5 nm change in CD over a 6 hour time period. Prior to exposure the mask blanks were kept in light-tight

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bags and non-outgassing boxes equipped with integrated sealing gasket. See example 1 in col.11-13.

Response to Arguments

8. Applicant's arguments, see p.14-15, filed 12/14/04, with respect to Tan in view of Capodieci have been fully considered and are persuasive. The 103 rejection of claims 16 and 18-35 has been withdrawn.

9. Applicant's arguments filed 12/14/04 with respect to Montgomery have been fully considered but they are not persuasive. In response to applicant's argument that Montgomery does not discuss a method for increasing the shelf life of a photomask substrate, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

10. In response to applicant's arguments, the recitation a method for increasing the shelf life of a photomask substrate has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand

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alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

11. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the length of time between the PAB and the exposure of the photomask substrate to radiation) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). As written the applicant's claims require only that after the "coated photomask substrate" is stored for more than 2 hours there is less than 20 nm difference in the critical dimensions (CD) of the feature when compared to the feature generated immediately after application, a limitation which is taught by Montgomery. This language does not require that the coated substrate be unexposed during this storage period. It is additionally unclear how the CD would be measured if there was no exposure performed in order to generate a feature. The applicant also argues that the less than 5 nm change in CD over a 5 hour period taught in Montgomery refers to the latent image or irradiated pattern. However the applicant's claims also refer to the latent image or irradiated pattern with the recitation of a difference of a critical dimension feature less than 20 nm. If there was no irradiation there would be no pattern or feature and no way to measure the critical dimension difference.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicole M Barreca whose telephone number is 571-272-1379. The examiner can normally be reached on Monday-Thursday (9AM-7PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nicole M Barreca
Examiner
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3/2/05